

# Sewer Base Rate Evaluation Project

## Final Report

Revised September 2, 2015

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# Project Goals

The purpose of this project was to evaluate the existing Orem City Utilities Billing Database(UBD) and modify it to reflect the actual residential units present at each address. UBD entries found to have multiple units will be charged a new sewer base rate based on the number of units present. This will produce a more equitable billing scheme and recover more funds from properties which produce more sewage. Each entry in the UDB is associated with a single water meter which is identified by a GIS ID #. Over the course of this project every address in the UDB was also associated with a parcel from Utah County's cadastral data layer in order to make the UDB spatially aware. Commercial properties as well as mixed-use parcels were identified. This project was completed between December 2014 and May 2015.

# Process Overview

**Step 1:** The UBD was copied to my computer and ordered by meter reading route (Book). Each zone (Book) was examined in order from 1 to 99. I also utilized a map of parcels from the county, a map layer indicating current 'multiple-unit' parcels, a map of water meters maintained by the city, and an aerial photo of Orem taken in the spring of 2014.

**Step 2:** For each entry in the UDB I identified the address and found the corresponding parcel on Utah County's map layer. Any errors or discrepancies were noted and rectified later.

**Step 3:** The corresponding water meter for each parcel was found and its GISID was verified. Any meters that were missing or had errors in their GISID were collected and eventually forwarded to Layne Batty.

**Step 4:** The current 'Residential/Commercial' status of each entry in the UBD was verified. Errors or discrepancies in this categorization were collected and eventually sent to Thomas Phelps for rectification. If a property was correctly classified as 'Commercial', no further evaluation was performed.

# Process Overview (Cont.)

**Step 5:** A visual evaluation of residential properties was performed based on the aerial photo. Characteristics indicating that a property needed further evaluation included the presence of multiple driveways, walkways, garages, sectioned yards, secondary structures, etc. All parcels that were currently marked as 'multiple unit', as well as any property surrounded by 'multiple unit' parcels were also evaluated further.

**Step 6:** Any property that was not obviously a single unit was checked using Google Street View. Google's dataset includes street level photos taken in both 2007 and 2012. Each questionable property was checked for multiple mailboxes, address numbers, garbage cans and doors. Basement entryways could be seen as well. Any questionable parcels were added to the list of addresses to be verified in person. Other websites such as Bing Maps and Zillow.com were used to check certain properties. Zillow.com in particular was useful as it sometimes contained realty listings and photos which clarified the status of many properties that were listed as 'multiple unit'.

**Step 7:** Questionable properties were also verified using resources provided by Orem City. The Planning and Zoning's official Accessory Apartment List was used as well as the notes and comments present in the Utility Billing Database. The Utah County property database was also consulted.

# Process Overview (Cont.)

**Step 8:** Each questionable address not reasonably verified using in-office resources was checked in person. I checked for extra house numbers, multiple doors, the presence of extra garbage cans and mailboxes, and visible basement entryways.

**Step 9:** Checked empty and vacant parcels against a new version of the UBD for new accounts opened since the project began.

**Step 10:** Analyzed retirement homes and rehabilitation centers to determine if they were long-term or short-term care centers. Long-term centers were registered as residential and unit counts were determined. Short-term care centers were classified as commercial properties. Unit counts for mobile home parks were also verified.

**Step 11:** UBD addresses were modified to match address naming conventions in the county parcel layer. The UDB list was then linked to the parcels to create a map of residential property units.

# Residential Analysis

- 21,847 UBD entries were checked in office and in person.
- Of these, 20,141 were classified as residential and 1,706 as non-residential.
- The 20,141 residential accounts contained 27,472 units, broken down as such:

# Residential

Residential Units per Property	Count	Total Residential Units (Units per Property x Count)
0	1,725	0
1	18,323	18,323
2	997	1994
3	37	111
4	478	1912
5	19	95
6	43	258
7	2	14
8	8	64
9	2	18
10	1	10
12	82	984
13	2	26
14	2	28
15	4	60
16	31	496
17	1	17
18	17	306
20	7	140
21	1	21
22	1	22
24	32	768

# Residential (cont.)

Residential Units per Property	Count	Total Residential Units (Units per Property x Count)
25	3	75
26	1	26
27	4	108
28	2	56
32	1	32
34	1	34
35	3	105
40	3	120
41	2	82
43	1	43
48	2	96
52	1	52
68	1	68
77	1	77
83	1	83
88	1	88
142	1	142
144	1	144
178	1	178
196	1	196
	Total Properties	Total Residential Units
	21,847	27,472



# Residential Revenue Increase

METER SIZE	NEW UNIT TOTALS	CURRENTLY BILLING	ADDITIONAL UNITS	BASE RATE	TOTAL ADDITIONAL REVENUE
0.75	17,700	16,827	873	9.32	8,136.36
1	4,711	2,919	1,792	9.32	16,701.44
1.5	1,446	154	1,292	9.32	12,041.44
2	2,403	146	2,257	9.32	21,035.24
4	135	2	133	9.32	1,239.56
6	749	8	741	9.32	6,906.12
10	266	2	264	9.32	2,460.48
			<b>Monthly:</b>		<b>68,520.64</b>
			<b>Annual:</b>		<b>822,247.68</b>

# Mixed-Use Developments

ENTITY	Address	Residential Units	Commercial Facilities	Equivalent Meter Size
Wolverine Crossing Llc	1381 W 1100 South	258	10 toilets, 25 sinks	1.5
Murray, Scott	202 E 800 South	6	2 toilets, 4 sinks	0.75
Midtown360 (South Tower only)	320 S State Street	0	8 toilets, 23 sinks	1.5

# Commercial Properties

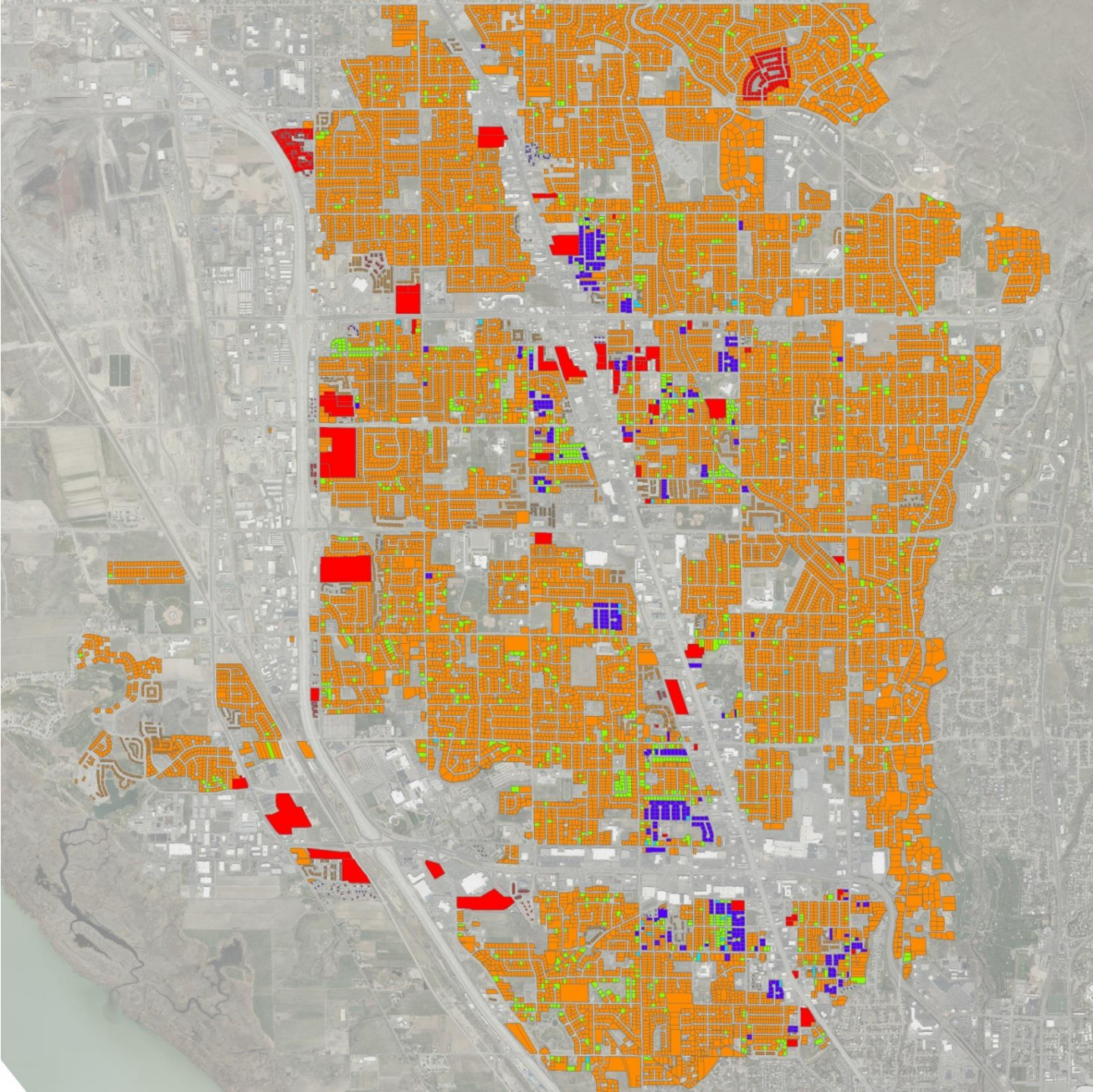
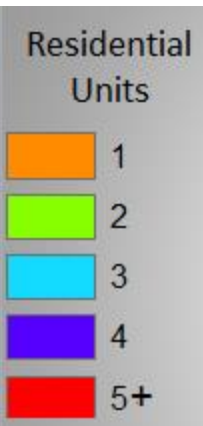
Meter Size	Count
0.75	809
1	405
1.5	203
2	242
3	16
4	28
6	2
8	4
	1,709

# Commercial Revenue Increase

Meter Size	New Unit Total	Current Base Rate	Current Revenue	Base Rate Multiplier	New Revenue	Total Additional Revenue
0.75	809	9.32	7,539.88	1	7,539.88	0
1	405	9.32	3,774.60	1.67	6,303.58	2,528.98
1.5	203	9.32	1,891.96	3.33	6,300.23	4,408.27
2	242	9.32	2,255.44	5.33	12,021.50	9,766.06
3	16	9.32	149.12	10	1,491.20	1,342.08
4	28	9.32	260.96	20	5,219.20	4,958.24
6	2	9.32	18.64	41.67	776.73	758.09
8	4	9.32	37.28	53.33	1,988.14	1,950.86
					<b>Monthly:</b>	<b>25,712.58</b>
					<b>Annual:</b>	<b>308,550.90</b>

# Total Revenue Increase

	Monthly Increase	Annual Increase
<b>Residential</b>	68,520.64	822,247.68
<b>Commercial</b>	25,712.58	308,550.96
<b>Total</b>	94,233.22	<b>1,130,798.64</b>



# Move Forward Plan

- Make presentation to the Orem City Council in a work session on October 27
- Obtain feedback and answer questions
- Make any necessary changes
- Present for adoption on November 10, 2015 with effective date of January 1, 2017
- Update financial model and sewer rates

# Questions?

